

Approaches to meet up the immediate demand of day old broiler chicks





Male Line White (Laying stage)

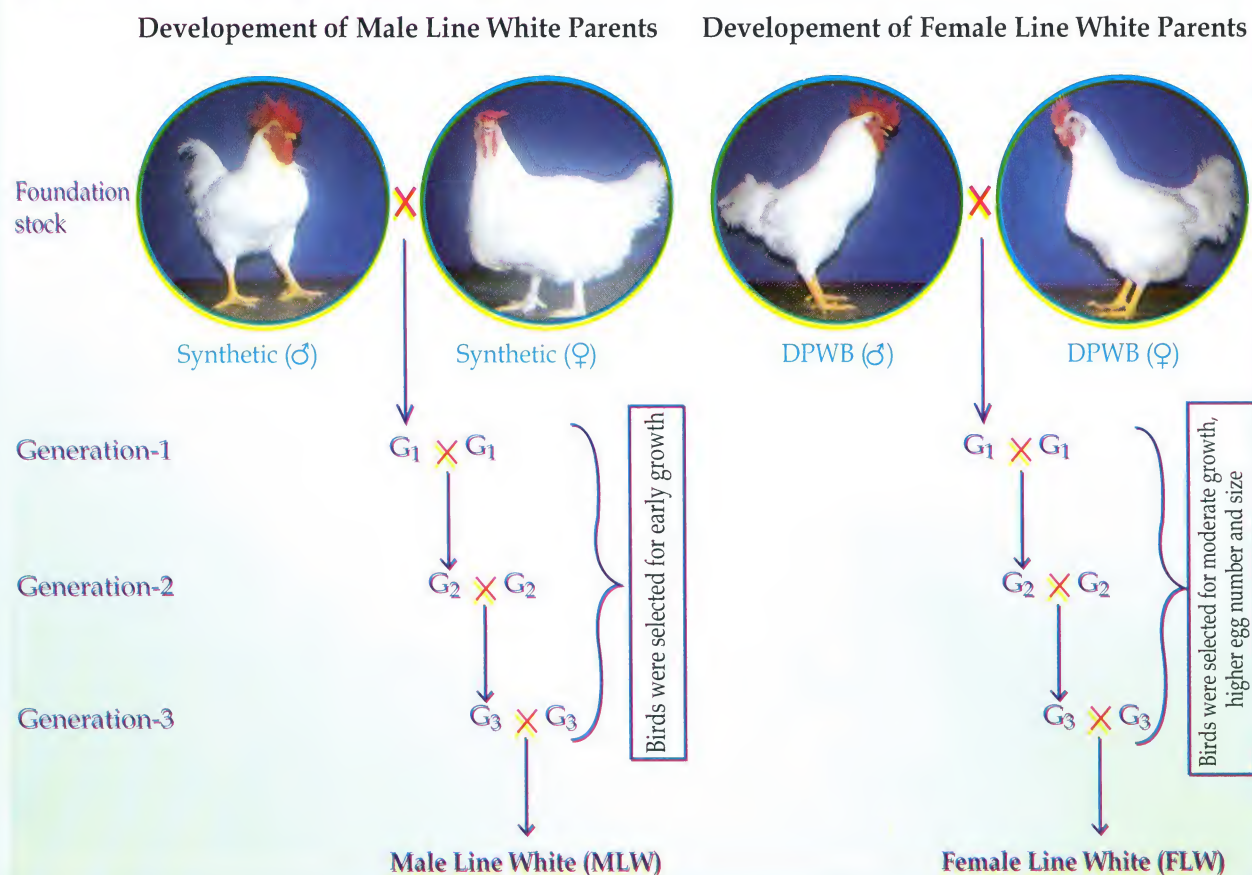


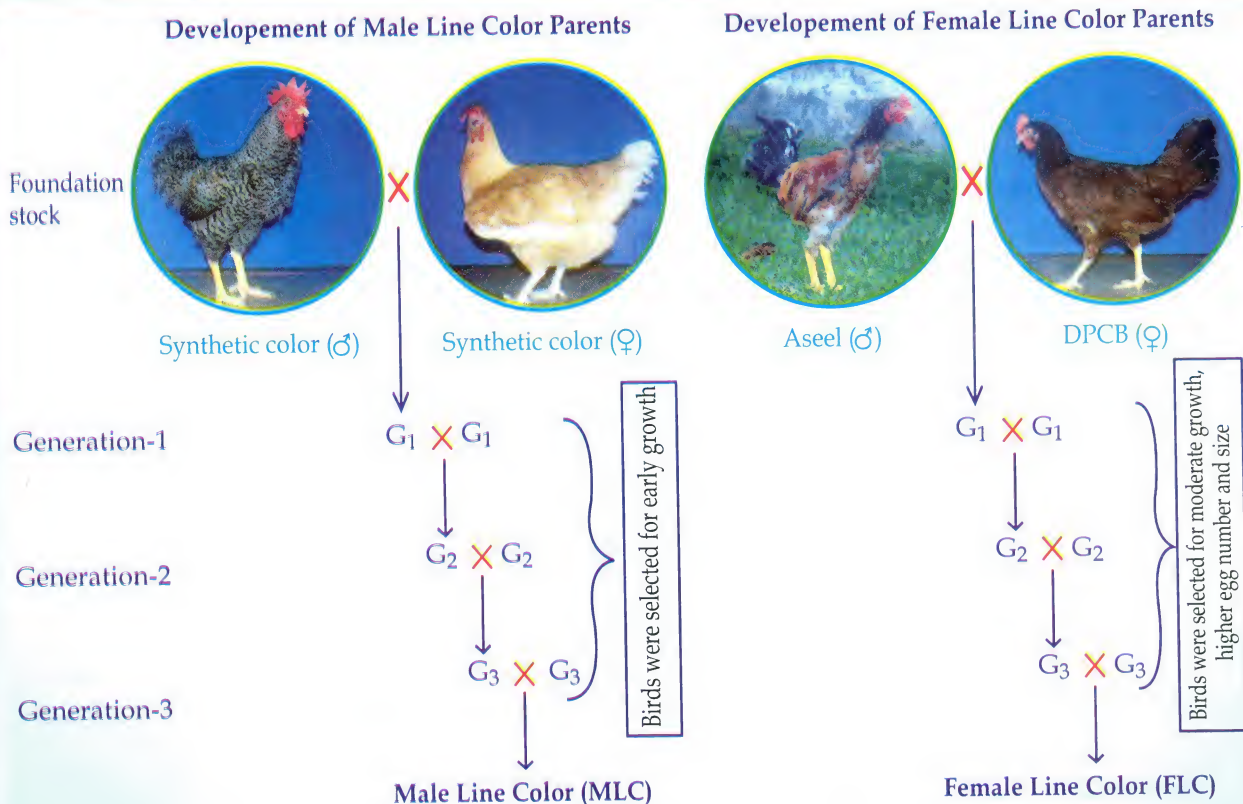
Male Line Color (Growing stage)

Introduction

Commercial Poultry production has gained popularity since last two decades in Bangladesh. As is known, malnutrition, specifically the protein and energy malnutrition is a major problem of the country which hindering the national productivity and development. Poultry plays an important role to create employment opportunity as well. With the present production of 197 thousand MT of poultry meat per year, the availability of animal protein is about 13g/person/day; which needs to be raised to nearly 50-60g /person/day. To fill the gap, Bangladesh import broiler parents and layer parents from outside the country spending hard earning foreign currency. Some countries of the world are trying to develop parent's lines from synthetic and available population through selection. With the same end in view, the present study was undertaken with financial assistance of the PIU-BARC, NATP: Phase-1 for a period of three years primarily aimed to develop broiler parents from available genetic resources and thus to produce day-old broiler chicks.

Approach and Methodology





Development of Commercial Broiler

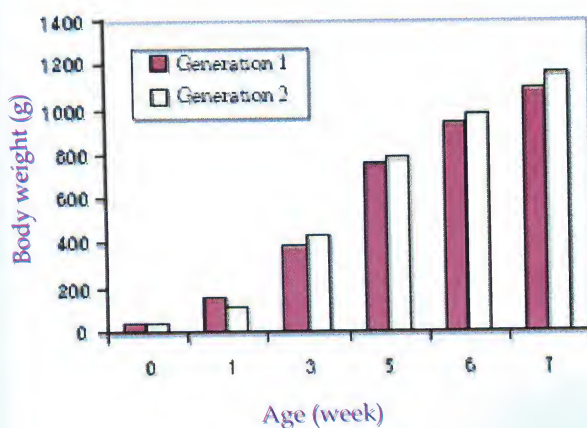


Fig. 1. Male line

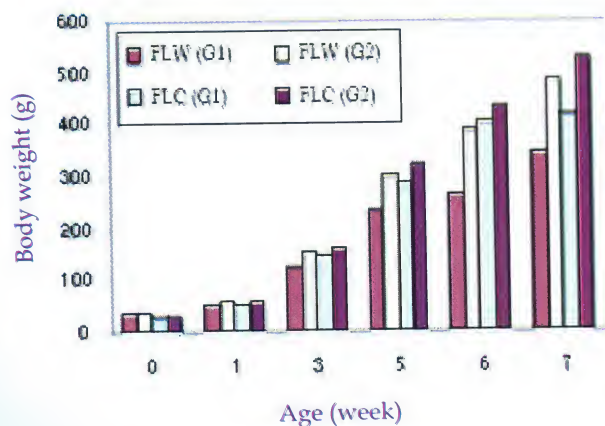


Fig. 2. Female lines

Fig. 1 and 2. Genetic gain of growth for phenotypic and index selection of sire and dam lines parents

Table 1. Reproductive performances of sire and dam line parents up to 35 weeks of age

Parameters	Generation - 1	Generation - 2	Gain/change
Sexual maturity (days/wk)			
MLW	178 days (26wk)	165 days (24wk)	- 2 wk
MLC	-	142 days (21wk)	-
FLW	151 days (22wk)	163 days 24wk	+ 2 wk
FLC	145 days (21wk)	163 days 24wk	+ 3 wk
Egg production (No/ %)			
MLW	23 No (36.50%)	31 No (40.25%)	+ 8 eggs (4.50%)
MLC	-	57 No (60.12%)	-
FLW	48 No (52.74%)	54 No (58.44%)	+ 4 eggs (5.36%)
FLC	65 No (66.32%)	45 No (60.31%)	-13 No (-5.92%)
Age at peak production (%)			
MLW	246 days (36wk) (53%)	190 days 28wk (69%)	- 8wk (+16%)
MLC	-	28wk (73%)	-
FLW	236 days (34 wk) (85%)	195 days (28wk) (93%)	- 6wk (+8%)
FLC	172 days (25wk) (92%)	178 days (26wk) (81%)	+ 1wk (-11%)

MLW: Male line white, MLC: Male line color, FLW: Female line white, FLC: Female line color

Table 2. Effect of selection on egg size of sire and dam lines parents

Parameters	Generation -1	Generation -2	Gain/ change	Remarks	
Egg size at sexual maturity(g)					
MLW	38.00	51.00	+ 13.00	1g increase of day-old wt, live wt, at marketing increased by 40-50g	
MLC	-	40.00	-		
FLW	33.00	48.00	+ 15.00		
FLC	28.00	41.00	+ 13.00		
Egg size at 32wks (g)					
MLW	52.86	63.67	+ 10.81		
MLC	-	60.40	-		
FLW	51.92	55.80	+ 3.88		
FLC	41.55	47.90	+ 6.35		

Table 3. Performance of white and colored broilers at 6 weeks of age

Parameters	MLW × FLW	MLC × FLC
Live weight (g)	1184.00	739.00
Dressing (%)	75.98	76.03
FCR	1.67	1.98
Livability (%)	99.00	99.00
Feather color	White	Brown

Success Story

- Now two commercial broiler strains (white and color) with satisfactory performance are available.
- Two male lines and two female lines parent will be evolved.
- One fellow will complete Ph.D. on poultry breeding.
- Three completed M.S. degree and two will submit their thesis soon.

Lesson learned

- Synthetic white male mated with colored female produces white feathered broiler.
- So we included another colored male line from 2nd generation to produce colored broiler strain.
- To attained standard market size of broiler of 1500g, the released strain need to be marked at 7 weeks of age.
- To attained faster growth at the early stage, the parents lines need to be further selected for another 4 to 5 generations to observe their responses.

Output and way forward

- The performance of white feather broiler produced through crossing of MLW \times FLW attained 1184g at 6 weeks of age with satisfactory F.C.R and dressing meat yield, while the colored strain (MLC \times FLC) grow slowly with the best dressing yield, 76.03 %.
- Two male lines and two female line parents evolved for the production of broiler strains.
- Two broiler strains i.e. one white feather and another colored are expected to be released on completion of the project.



Incubation of hatching eggs

Day-old chicks (White strain)

Day-old chicks (Color strain)



MLW X FLW (42 days of age)



MLC X FLC (42 days of age)



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Approaches to develop broiler sire & dam lines from available genetic resources

Sub-Project

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